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## *Forecasting the Effects of Army XXI Design Upon Multinational Force Compatibility*

*Brian Nichiporuk*

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*Brian Nichiporuk*

*Prepared for the  
United States Army*

**Arroyo Center**

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## PREFACE

This documented briefing represents the results of work done for the Military Assistant to the Deputy Under Secretary of the Army for International Affairs (DUSA-IA). This work was part of a larger study that also included analysis of the implications of land-force dominance for U.S. Army engagement efforts, sponsored by the Office of the Deputy Chief of Staff of the Army for Intelligence (DCSINT).

The study as a whole was undertaken within the Strategy, Doctrine, and Resources Program of the RAND Arroyo Center. The Arroyo Center is a federally funded research and development center sponsored by the United States Army. This research should be of interest to both Army officers and civilian analysts who deal with the subject of future multinational force compatibility.

## SUMMARY

The United States has fought alone before, and it is possible that it will do so again. However, the far greater likelihood is that the United States will fight with an ally or as part of a coalition—another Desert Storm is more likely than another Grenada. Thus, the ability of U.S. forces to operate effectively with those of other nations is an important issue. Unfortunately, doctrinal and technological changes under way in the U.S. Army may be making it more difficult for it to operate in conjunction with its friends and allies.

This documented briefing offers an approach to determining how impending changes—specifically those associated with Force XXI—could affect the Army's ability to operate with allies or as part of a coalition. It does so by identifying the aspects of Army XXI that could create difficulties in multinational force compatibility and then recommending policies and procedures to ameliorate the problems.

The analysis focuses on the Army's ability to operate with NATO forces, excluding the three most recent members. The rationale underpinning this focus is that these forces pose the best case. They have some of the most modern equipment of all our allies and partners, share doctrinal similarities with U.S. forces, and have operated in conjunction with them for years. If Force XXI advances create compatibility problems with NATO forces, the problems are likely to be far greater with other allies and partners.

An analysis of Army XXI shows that while it is an evolutionary rather than revolutionary advance, some of its key aspects are indeed likely to make it more difficult to operate as part of a multinational force. Problems crop up in the areas of C4I (command, control, communications, computers, and intelligence), force employment, and logistics. The problems become most severe in short-warning scenarios that require NATO countries to project their power beyond Europe.

Given the political and economic challenges facing the Europeans, it is unlikely that they will have either the means or the desire to afford defense budgets robust enough to enable their armies to match the advances of Force XXI. Therefore, the path to ameliorating the compatibility problems will not be to pursue technological fixes. Rather, policy and procedural changes offer the best chances of success and the added benefit of not requiring large investments.

Three approaches seem to offer the most promise. The first involves anticipating command structures. It is not necessary to wait until a crisis occurs to decide on command structures. The forces the United States is likely to operate with are known, as are their command structures and communications equipment. Also known are the general characteristics of the operations in which these forces would operate together, e.g., major theater war (MTW) or smaller-scale contingency (SSC). Command structure issues could be addressed well in advance and then implemented when the contingency occurs.

A second approach entails force coordination and information sharing about technical and operational matters. It requires the United States to share information with those NATO nations most likely to be involved in power-projection missions. This approach could lead to an agreed-upon division of labor that could reduce the complexity of the operation and thus the compatibility problems. It would also give allies the information necessary to anticipate some of the emerging compatibility issues.

The final approach is to intensify engagement efforts with allies. These efforts would use U.S. forward presence as a springboard to enhanced interoperability. This tack could lead to, for example, common sets of prepositioned equipment and ammunition. The United States could also develop bilateral planning staffs in areas of mutual strategic interest. These staffs could establish common protocols and standards that could expand to other friendly nations in the region in the event of a conflict.

These approaches, while promising, require long-term and concerted effort during peacetime. It would simply be in the best interests of the U.S. Army not to have to depend upon ad hoc solutions devised in the middle of a crisis as its principal means of addressing compatibility problems.

## ACKNOWLEDGMENTS

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# **Forecasting the Effects of Army XXI Design upon Multinational Force Compatibility**

**Brian Nichiporuk**

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This briefing aims to create a framework for understanding how the capability advances likely to be produced by the Army's Force XXI initiative might affect interoperability and compatibility with our allies and coalition partners. The salience of this issue lies in the fact that most of the U.S. Army's deployments in upcoming decades are likely to be conducted alongside our allies and partners and, to the extent that operational cooperation with our friends can proceed smoothly, U.S. commanders will have more time to concentrate on dealing with the enemy's forces.

We chose not to examine the possible impact of the AAN (Army After Next) effort upon multinational force compatibility (MFC) for the simple reason that AAN is still in the conceptual phase and is not yet well formed enough for us to analyze in this context. However, as the AAN effort takes shape, serious work will have to be done on its likely impact upon MFC. This presentation will just focus upon the likely effects of Army XXI upon MFC as well as potential remedies to any MFC problems that might emerge.

## Why Do We Care?

Inattention to MFC issues on the part of the Army could have damaging operational and strategic consequences

- Greater expenditure of blood, treasure, and time, especially in no-warning conflicts
- Pol-mil disintegration in SSCs
- Strains in key alliances (NATO, US/ROK)
- Weakened deterrence posture for U.S. around the globe

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Perhaps the most important initial question to ask is why the Army should spend time thinking about MFC when it has so many other pressing issues on its agenda at the moment. Despite having many other more near-term concerns, the U.S. Army could pay a high price for ignoring the MFC implications of Army XXI. We see four good motivations for addressing this problem now.

First, many analysts suggest that future adversaries of the United States, having learned the lessons of Desert Storm, will give little or no warning of an attack against a critical American ally or friend. Thus, the United States will have relatively less time to set up protocols and procedures for coordinating the actions of diverse multinational units than it did, for example, before the IFOR intervention in Bosnia. If sufficient preparation for interoperability has not been made, future American forced-entry operations may resemble the tragic first days of our ground involvement on the Korean Peninsula in the summer of 1950 more than Desert Storm.

Second, incompatibilities during smaller-scale contingencies (SSCs) can quickly cause misunderstandings about the means to be used to acquire the ends sought by a multinational force. Such misunderstandings can lead to the gradual politico-military disintegration of an SSC operation. As an example, the different patrolling tactics used by the various militaries participating in the U.S.-led UN mission in Somalia in 1993 created cleavages within the multinational coalition and opened up

opportunities that the militia of Mohammed Farah Aidid could exploit. Italian troops, for instance, preferred the use of very cautious tactics against the Aidid militia, while American and Pakistani units were far more assertive. Such discrepancies undoubtedly emboldened Aidid's forces, encouraging them to begin undertaking more aggressive attacks against the UN contingent, with a special focus on the U.S. Army Ranger and Special Operations units that formed the backbone of that contingent. This kind of incompatibility-related weakness must be avoided in future multinational operations of which U.S. forces are a part.

Third, at the political level, the knowledge that one member of an alliance has advanced capabilities that are not easily compatible with those of the other members can cause strains in the alliance that will hinder its ability to act decisively. If, for example, the West European members of NATO do not have the ability to operate side-by-side with U.S. Army XXI units, there would be incentives on both sides of the Atlantic to downgrade the role of NATO as an out-of-area actor. On the U.S. side, there would be the perception that European participation in a given out-of-area operation would only slow down the U.S. Army, while the Europeans could regard the U.S. inattention to MFC issues as a desire by Washington to undertake more unilateral actions on the periphery of Europe, actions that would not require close consultation with West European governments. The resulting mistrust would damage alliance cohesion.

Last, but not least, is the likelihood that poor MFC could undermine the credibility of U.S. commitments and deterrence postures around the world. Much of America's international influence today comes from its ability to marshal powerful coalitions of like-minded nations to repel aggression and punish rogue states. The political strains caused by poor MFC between the United States and its allies and friends could, over the long term, create a perception among many potential regional aggressors that the United States can no longer act with the blessing of much of the international community when confronted with threats to its vital interests.

## Project Objectives

- To identify the multinational force compatibility problems that could arise in future operations as a result of Army XXI design
- To begin to formulate policies and procedures that might ameliorate such problems

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Our project has two specific objectives. First, it will be important to identify the MFC problems (in both major theater wars (MTWs) and SSCs) that could arise as a result of Army XXI design. After determining which problems are most serious, we will move on to our second objective, which is to formulate some concepts for low-cost policies and procedures that can ameliorate them. In this report, we devote the bulk of our time to dealing with the first objective.

## **Our Study Will Cover Both Alliance and Coalition Operations**

- **Alliance operations:** operations taking place within the bounds of NATO or CFC in Korea
- **Coalition operations:** a multinational action outside the bounds of an established alliance

**Source: Army FM 100-8, November 1997**

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Our project covers both alliance and coalition operations as they are defined in the most recent draft of FM 100-8. That document defines alliance operations as those taking place only within the confines of NATO or the CFC in South Korea. Operations outside the bounds of these alliances are regarded as coalition operations.

## Key Findings

- Successful completion of Force XXI initiative will create a U.S.–West European capabilities gap
- European defense investment levels will not permit a purely technological solution
- Procedural “workarounds” can help to ameliorate emerging gap

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Before moving into the body of the briefing, we will preview the key findings of this research. First, the work showed that a capabilities gap between the U.S. Army and its NATO–West European counterparts will likely emerge in the 2005–2010 timeframe, assuming that the Force XXI initiative proceeds on to fruition and results in the fielding of actual Army XXI divisions. There will be a substantial variance between the capabilities of the various major West European armies, but, overall, the picture is one of an asymmetry in capabilities.

Second, it does not appear likely that this capabilities gap can be remedied through a simple increase in the technological level of the European armies. This is because a variety of pressures and competing priorities will not permit West European governments to substantially increase their defense investment levels in the years to come.

Third and finally, the analysis showed that creative procedural workarounds can indeed help to ameliorate the emerging capability gap between the U.S. Army and its West European NATO counterparts. These workarounds will not be costly, either.

## Briefing Outline

- • **Army XXI design**
- **Assessing US/NATO allies capabilities gap**
- **Possible remedies**
  - **Aligning command structures with scenarios**
  - **Other policies and procedures**
  - **Engagement measures**

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The remainder of our presentation has three parts. We begin by examining the nature of the proposed Army XXI design. Then we look at the power-projection capabilities of America's West European NATO allies as an illustrative case and compare them with the likely capabilities of Army XXI. We distinguish our West European NATO allies from the new Central European NATO members (Poland, Hungary, the Czech Republic) simply because the new NATO members are at a significantly lower level of development and thus cannot be judged by the same standards of compatibility and interoperability.

We focus on the West European NATO nations for two reasons. First, the Europeans represent the best possible case for future MFC with the U.S. Army. They generally have more technologically advanced military systems and industrial bases than do America's potential partners in other regions of the world. Additionally, the West European NATO members have conducted combined planning, deployments, and exercises with the U.S. Army since the 1950s and therefore have come to be institutionally close to the U.S. military in a way that is not matched by any other set of militaries. Simply put, if there is a likelihood of future MFC problems with our West European NATO allies, then we can almost certainly assume that such problems will be even more severe with friendly militaries in East Asia and the Persian Gulf.

Second, we believe it is more helpful to look at potential MFC problems with a relatively narrow set of foreign militaries in depth rather than covering a wide swath of foreign militaries superficially. Our survey of West European NATO power-projection capabilities concentrated on the areas of strategic airlift and sealift, logistics, and C4I. According to the literature available, these are the areas in which MFC problems can have the greatest negative influences on the overall combat capability of a coalition or alliance force.

Finally, we conclude the briefing by positing some measures that could ameliorate the disparity in force capability that seems to be emerging between Force XXI and the West European NATO ground forces.



## **Army XXI Design Features Six Tenets**

- **Flexible force tailoring, deploy directly to combat**
- **Mass effects without massing forces**
  - Dispersed ops
  - Deep, precise fires
- **Superior situational awareness**
  - Synchronized ops, digitization
- **Better force shrouding**
  - Stealth, defensive EW, TMD
- **Total Asset Visibility**
- **Split based operations**

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Force XXI aims at achieving six objectives. These objectives are to be reached through the better integration and use of existing platforms rather than through a recapitalization effort. In other words, with a few exceptions, the Force XXI process is a software, as opposed to a hardware, revolution for the U.S. Army.

First, Force XXI initiatives will enable better and faster force tailoring of deployed task forces so that, once in theater, these combined arms task forces can deploy direct to combat without spending much time in intermediate staging and assembly areas. This will reduce the period during which arriving Army units would be attractive targets for enemy air and missile strikes.

Second, Army XXI units will be able to mass the effects of their combat power without massing forces in the fashion of World War II-style mechanized warfare. As the lethality of future weapons systems increases, the battlefield of the future will demand smaller force densities and nonlinear force alignments. Army XXI campaign forces will achieve this through dispersed operations and the use of deep precision fires from systems like MLRS, Crusader, and ATACMS.

Third, superior situational awareness is perhaps the true cornerstone of Army XXI as it is currently envisioned. Digitized units of the type that have been tested in the Army's recent Advanced Warfighting Experiment rotations at the National Training Center will be so well

interconnected that every node in the unit will have complete situational awareness of friendly force positions, and thus little time will have to be wasted on communications streams dedicated to determining the location of neighboring personnel and vehicles. The use of the highly accurate timekeeping function in GPS will enable more precisely synchronized operations by geographically separated units as well.

Fourth, as enemy direct and indirect fire systems become more lethal, Army XXI will counter these increased threats by shrouding U.S. units more effectively on the battlefield. Better force protection will enable more rapid and aggressive maneuvering against opponents whose decision cycles will probably be relatively slower. Defensive electronic warfare systems, active protection for armored vehicles, better obscurants, and theater missile defenses (TMD) will all contribute to better force protection.

The fifth and sixth tenets of Force XXI planning have to do with logistics. Total Asset Visibility is a system that will allow leaner logistics networks to be put in place in the theater of operations. No longer will U.S. forces pile up "iron mountains" of supplies to make tempting targets for future adversaries. Split based operations will increase the tooth-to-tail ratio of U.S. forces deployed overseas by using advanced telecommunications technology to keep many support functions (intel nodes, medical specialists, transportation planners) physically located in CONUS while still having the output of their work present in the theater of operations in near real time.

## **Force XXI Represents Continuing Change from Platform- to Network-centric War**

- Very high speed operations
- Shatter enemy cohesion rather than just attriting or outmaneuvering
- Simultaneous operations throughout the depth of the battlespace
- Highly capable backbone information grid enables attached sensor and engagement grids

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Force XXI represents part of an ongoing move in the U.S. military from warfare based on platforms (platform-centric warfare) to warfare based on networks of interconnected platforms (network-centric warfare). Network-centric warfare aims to use high-speed, simultaneous operations on air, land, sea, and in space to shatter the enemy's cohesion quickly by shutting off his plausible options for countering American moves. Neither attrition nor simple maneuver will be the standard by which we judge the effectiveness of joint U.S. military operations. The Army's Force XXI process, if completed successfully, will help produce the first generation of joint forces to function in the era of network-centric warfare. Army XXI's ability to perform its missions will be grounded in a highly capable "backbone" information grid that will enable smaller sensor and engagement grids. These smaller grids are directly responsible for supporting Army XXI's ground combat needs.

## **Army XXI Is an Incremental Advancement**

- **Army XXI design strengthens those elements of command, control, and precision that existed in embryonic form in Desert Storm**
- **Not a paradigm shift**
- **AAN program will be the next large-scale innovation in Army doctrine and force design**
  - Self-deployable battle forces
  - Air-mech concept
  - High-tech raiding force with strategic reach
  - New generation of technologies in propulsion, logistics, signature control, gunnery

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Despite the technological advances represented by Force XXI, we do not believe that it is a full-blown military innovation; rather, it is an important but incremental move forward from the current Army of Excellence, which is the product of the innovation of the 1980s AirLand Battle doctrine. We make this contention since we believe that many of the trends in combat development that form the basis of the Force XXI initiative were present in embryonic form during Desert Storm. In the Persian Gulf War, one could already observe precursors of the elements of superior situational awareness, high-speed operations, massing of effects, and precision deep fires that constitute the bulk of the Force XXI design program.

We believe that the next possibility for true innovation in Army doctrine and force design will occur during the 2020–2025 timeframe if the Army After Next (AAN) initiative comes to fruition. AAN is currently envisioned as providing the nation with a largely self-deployable air-mechanized battle force that will be able to shock, stun, and disorient heavier enemy forces and stop them cold until slower-deploying Army XXI divisions arrive to roll the enemy back and secure final victory. This proposed air-mechanized force will essentially be a high-tech, light raiding force with strategic reach. In addition to this planned innovation in doctrine and force design, the AAN will incorporate some revolutionary new technological applications in the areas of vehicle propulsion, logistics, signature control for both ground and aerial vehicles (tilt-rotor aircraft and helicopters), and gunnery.

## Briefing Outline

- Army XXI design
- • Assessing US/NATO allies capabilities gap
- Possible remedies
  - Aligning command structures with scenarios
  - Other policies and procedures
  - Engagement measures

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We now move on to a quick review of the power-projection capabilities available to America's West European NATO allies.

## Lessons from Our Case Studies

**Extensive preparation time, geographical proximity to NATO countries enable many structural and operational problems to be overcome**

- U.S. role as furnisher of C4I backbone, lender of tactical comm equipment
- Active liaison teams
- Phased deployments and IPBs
- Predeployment training and planning
- Methodical efforts to separate forces with disparate capabilities
- Existing integrated command staffs

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The MFC case studies of Desert Storm, Haiti, and Bosnia IFOR will be covered in detail in an as-yet unpublished RAND report. These case studies help us to better bound the problem of U.S.-European compatibility in the Army XXI era. Results of the case study research provide grounds for some optimism about the possibilities for U.S.-European MFC in certain types of contingencies even if the current problems are not redressed. This research demonstrated that, given extensive preparation time or close geographical proximity to Western Europe, NATO's capable institutions and joint planning bodies can most likely overcome most technical MFC problems. The cases of Desert Storm and Bosnia are especially illustrative in this regard.

There are many mechanisms that NATO can use to create "workarounds" that will ameliorate MFC problems in the event that either significant warning time is available or geographical proximity exists. In such scenarios, the United States would be able to infuse large amounts of tactical communications equipment into the force structures of its allies as well as to provide an underlying information backbone for all allied operations. NATO could activate numerous liaison teams between different national contingents to ensure that communications and planning mixups do not occur. Phased deployments and careful intelligence preparations of the battlefield (IPBs) would also paper over many MFC problems. Extensive predeployment training and planning (as happened in the months

before IFOR entered Bosnia), careful force separation measures (as took place in Saudi Arabia before Desert Storm), and the deployment of existing integrated command staffs are also measures that would go a long way toward eliminating the major MFC concerns.

## **Likelihood of Future Deployment/Employment Problems Greatest in Short-Warning, Out-of-Area Contingencies**

### Deployment

- ARRC force projection and tailoring less capable than Army XXI (Deployment gap ???)

### Employment

- Weaker European capability for deep fires, synchronization, and force protection (especially NBC)
- Divergent tempos increase risk of fratricide and exposed units
- Delayed intelligence sharing between Army XXI and ARRC reduces situational awareness
- Lack of careful force separation reduces maneuver to “least common denominator”

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The previous slide showed us that sufficient warning time or proximity to Western Europe would ameliorate some MFC problems for the United States and its NATO allies. But the contingencies with only short warning times and/or locations far from Western Europe (“out-of-area” contingencies) are likely to be more challenging. Short-warning, out-of-area major theater wars (MTWs) constitute a real danger zone for the United States and its NATO allies in terms of MFC in the Army XXI time frame because MTWs usually involve conventional military forces that can seize territory rapidly and thus achieve closure if NATO does not put a fully compatible force on the ground quickly. While short-warning, out-of-area SSCs will also present difficulties for NATO, the danger will be somewhat less since SSCs usually do not reach a state of closure as fast as conventional operations do (e.g., the 1990 Iraqi invasion of Kuwait took far less time to complete than did the Serbian offensives in Bosnia in 1992–1993). There are four areas of concern here: deployment, employment, logistics, and C4I.

Our NATO allies’ primary out-of-area capability lies in the ACE Rapid Reaction Corps (ARRC), NATO’s rapid-reaction arm for crisis management around the periphery of alliance territory. Therefore, the future ARRC is the European capability against which we measured Army XXI. There are ten multinational divisions earmarked for the ARRC, and four of them are said to be deployable at any given moment.



Despite some impressive numbers on paper and ongoing modernization in certain areas, the ARRC does have weaknesses, which, if left uncorrected during the next decade, would hamper its ability to interoperate with Army XXI. These weaknesses derive from both an investment gap between the United States and Western Europe and the varying speeds of transition among the different European states from the old Cold War-era territorial defense force structure model to the newer power-projection force structure model that suits NATO's emerging military missions on the European periphery. The United Kingdom, for example, is moving rapidly toward building itself a new military based on the power-projection model. France is moving in the same direction, but more slowly, while Germany is still clinging to the territorial defense model by maintaining conscription.

**Deployment:** A paucity of organic strategic mobility assets severely hampers the capability of the West Europeans to deploy to out-of-area contingencies in areas like the Persian Gulf, North Africa, and the Transcaucasus. Barring major new investments in strategic mobility (both airlift and sealift), rapid power projection into areas other than the Balkans and Eastern Europe will pose difficulties for the Europeans in 2005–2010 unless they were to have access to U.S. airlift/sealift fleets. By the time major European units would gain access to enough commercial lift capacity, the critical phase of the conflict could well be over. The situation may be more forgiving in the case of an SSC, as the time pressures will likely be less.

There are signs that some progress in correcting this deficiency is being made, albeit slowly. The Royal Netherlands Air Force, for example, has purchased two KDC-10 aerial tankers that now give it the capability to deploy 12 of its F-16s worldwide. The British are expressing an interest in purchasing or leasing small numbers of U.S.-manufactured C-17 transport aircraft, and the German Luftwaffe appears to be considering a future deal to acquire or lease some of the large-capacity An-70 airlift aircraft that Ukraine will be producing. Yet another option on the horizon for the West Europeans is the European FLA project, a multinational effort aimed at building a heavy airlifter that can serve the needs of several European militaries in the next century. These steps are positive ones for the cause of future MFC, but they alone will not completely solve the allies' capability deficiencies in this area.

**Employment:** Employment incompatibility in the future is also worth mentioning. Although some European nations are undertaking selective ground force modernization programs, the overall picture is still one where many of the deployable units in the future ARRC could not be employed in the same rigorous manner as U.S. Army XXI

units. This asymmetry will be especially pronounced in the areas of deep fires capability, synchronization of maneuver, and force protection capability.

Many deployable European units will lack the type of advanced deep fires systems that the U.S. Army so emphasizes in its doctrine. These are systems like the MLRS (Multiple Launch Rocket System), ATACMS (Army Tactical Missile System), and the soon-to-be-introduced Crusader 155mm self-propelled artillery piece. This area of deficiency may turn out to be less egregious than deployability, as there are some initiatives under way to provide more long-range, ground-based firepower to European armies. Two examples are the Bundeswehr's coming introduction of the PzHb2000 self-propelled howitzer into its force structure and the sale of MLRS units to certain European nations like the UK and Germany through the U.S. Foreign Military Sales (FMS) program. Nevertheless, even with these acquisitions, most allied European militaries will still lack the overall deep fires architecture (long-range sensors, real-time targeting adjustment capabilities, and battle damage assessment tools) which Army XXI will have and which will be required to fully take advantage of advanced firing platforms. Against a determined and capable regional adversary, any weakness in deep fires capability would harm the Europeans' ability to shape the battlespace and also force them to fight more "close battle" engagements, which would almost certainly result in relatively high losses.

Synchronization of maneuver as a result of digitization and horizontal integration of individual unit nodes would increase the compatibility of Western multinational forces in the Army XXI era. Any lack of fully digitized units in European expeditionary forces would cause timing and organization problems in the implementation of operational plans. Another potential incompatibility that may warrant attention here is the application of artificial intelligence technology to decisionmaking and planning. Advances in AI applications may create large increases in the ability of U.S. forces to synchronize their movements.

Force protection assumes a new importance for NATO expeditionary forces in an era where increasing numbers of regional powers are pursuing the acquisition of weapons of mass destruction and the means to deliver them. In this context, the future importance of good theater missile defenses (TMD) looms large and there is the potential that the West Europeans will not have TMD capabilities as effective as those of the United States in the 2005–2010 timeframe. This is not to say that the West Europeans are completely vulnerable in this area; both the

Netherlands and Germany deploy Patriot SAM (surface-to-air missile) units that have a rudimentary TMD capability, while the French have the somewhat less capable Roland and Crotale systems in their inventory. However, in 10-15 years, if the United States is able to successfully deploy the THAAD (Theater High Altitude Air Defense) system, the Navy's Area Wide and Theater Wide TMD systems, and the Air Force's ABL (Airborne Laser), then a significant capabilities gap could emerge between the two sides of the Atlantic in this area. One caveat here is that it is by no means certain that the United States will be successful in fielding the above-mentioned systems; indeed, at the moment, serious technical obstacles remain in each of the next-generation U.S. TMD programs. Another area worth exploring in the general area of force protection is personnel protection for soldiers on the battlefield. If any asymmetries were to develop in this area between U.S. and West European NATO forces, the result could be significant differences in casualty expectations.

In short-warning, out-of-area MTWs, the deployment and employment shortfalls mentioned above could be a source of worry for allied commanders. Furthermore, they could result in an increased number of both fratricide cases and exposed allied units on the battlefield. The principles of synchronization of maneuver throughout the battlespace and the need for a base level of common force protection will still apply in most SSCs. In selected situations, there could be a need for the coordinated use of deep fires systems in SSCs taking place under especially demanding conditions. Overall, it appears that the greatest area of employment incompatibility between U.S. and West European NATO forces in SSCs will be in intratheater airmobility; the United States is likely to have a significantly better capability to move forces and supplies around the battlespace with helicopters in an SSC than will most West European expeditionary contingents.

## Likelihood of Logistics/C4I Problems Greatest in Short-Warning, Out-of-Area Contingencies

### Logistics

- Varying levels of national munitions sustainment stocks and less capable European expeditionary logistics could hamper Army XXI operations

### C4I

- Misaligned U.S./European operational architectures (e.g., Purple Star exercise)
- Multinational forces compelled to adopt clumsy parallel command arrangements by default
- Fuzzy command relations between out-of-area U.S. CINCs and ARRC
- Outdated tactical standardization protocols

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**Logistics:** There are two types of logistics MFC problem that could face the United States and its West European allies in future short-warning, out-of-area contingencies. The first is varying levels of national munitions sustainment stocks (especially in precision-guided munitions, or PGMs) between the U.S. Army and its European counterparts. This is a legacy of the Cold War era, when the major European NATO members tended to believe that any Soviet conventional invasion of West Germany would quickly escalate to nuclear war, thus rendering large stockpiles of conventional munitions irrelevant. In the 1980s, the U.S. Army came to believe that it could prevail in a conventional conflict in West Germany and proceeded to build up large stockpiles of reserve munitions. Shortfalls in West European munitions stockpiles for expeditionary forces could compel European units to operate at a lower tempo than their American counterparts in any major regional contingency in the 2005–2010 period, thus weakening the position of U.S. Army units operating alongside and creating opportunities for skilled opponents. This problem will be far more important in MTWs than in SSCs. Extremely high rates of ammunition expenditure over a period of more than four to five days are unlikely in virtually all SSC scenarios that we can envision for the future.

The second concern in this area has to do with a relative shortage of expeditionary logistics units and networks in European armies, many of which are still closely tied to homeland depots. This could force

NATO to rely on U.S. intertheater transportation assets to move significant quantities of European munitions into an MTW theater, thus straining Army XXI's lean logistics system by taking up precious space on airlift and sealift assets. Differences in expeditionary logistics capability could thus adversely affect the conduct of an out-of-area alliance military effort.

**C4I:** Finally, there is the C4I area. Although the recent IFOR/SFOR operation in Bosnia demonstrated that substantial progress has been made within NATO in the area of C4I compatibility, the fact is that problems could still emerge in the Army XXI era if measures are not taken soon to mitigate them. Misaligned operational architectures pose perhaps the greatest danger to MFC at the theater level; this looming issue was illustrated during the recent Purple Star exercise held by U.S. Atlantic Command. Poor tactical standardization protocols are yet another technical obstacle that came to the fore in recent U.S.-European multinational operations. Technical mismatches could conceivably increase the opportunities for an opponent to use offensive information warfare against a U.S.-European expeditionary force. Difficulties in technical C4I interoperability, in turn, will inevitably lead to disjunctures at the political level. Multinational expeditionary forces that lack good technical C4I interoperability will often find themselves compelled to adopt clumsy parallel command arrangements by default in the early stages of short-warning, out-of-area contingencies. Such arrangements may promote confusion and disorder, preventing the allies from taking full advantage of their combat potential.

Additionally, technical difficulties could further blur the command lines between the ARRC and U.S. out-of-area commands like CENTCOM and PACOM, lines which, even assuming optimal technical interoperability, would probably not be completely clear at the outset of an out-of-area U.S.-West European expeditionary operation. C4I incompatibility is a serious concern with potentially damaging effects in both MTWs and SSCs.

### **Poor MFC Has Political Implications for Alliances and Coalitions**

- Greater exposure to close combat, MOUT, and high casualties creates resentment among allies and partners
- Partners perceive Army XXI as making them more vulnerable to asymmetric strategies
- Differing views about importance of territorial integrity (flexible vs. rigid defense)
- Army XXI early-entry forces compelled to act as fire brigades
- Speed of Army XXI ops may be inside alliance/coalition political decision cycles

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Poor MFC would do more than just limit the efficiency of U.S.-West European combined expeditionary forces; it could well create political cleavage lines among the various NATO members, thus reducing the will of alliance members to push to achieve their original objectives. The link between poor MFC and lessened political will and cohesion is valid for U.S. operations with non-European coalition partners as well.

This chart provides a sampling of the political problems that could arise. First, capability gaps between Army XXI and allied units could create a de facto division of labor in MTWs in which the U.S. divisions fight the enemy's armored main force units in open terrain while the allied units, having less capability to fight main force engagements, are left to deal with enemy forces holed up in urban areas and other forms of complex terrain. Naturally, fighting in urban areas entails more close-up engagements and higher casualties than would be seen in armored engagements where Army XXI units would be able to rely on synchronization and deep fires systems to keep casualties low. In such a situation, perceptions could grow among our allies that the United States views their troops as more expendable. The political implications of such perceptions would be dire indeed for alliance will and cohesion.

Second, the sheer speed and decisiveness of Army XXI operations could convince certain rogue states to employ asymmetric strategies against allied forces rather than engaging in a straightforward

force-on-force fight. Such asymmetric strategies may well involve the use of nuclear, biological, and chemical weapons. If allied forces are significantly less capable than Army XXI units in terms of speed and force protection, allied leaders may perceive a much greater danger inherent in the risk of WMD-based asymmetric strategies being used than do American leaders. Thus, in certain situations one could imagine capability gaps between U.S. and allied forces creating a hesitancy on the part of European or other allied leaders to even deploy to certain theaters alongside U.S. Army forces.

Third, capability gaps between U.S. and allied/coalition ground forces could lead to a divergence in opinion as to what the true centers of gravity are in a given campaign. The existence of fast-moving, deep-penetration Army XXI units will cause American political and military leaders to increasingly come to see the enemy force's cohesion and will as the center of gravity, while the capabilities of previous-generation allied/coalition ground forces may cause the leaders of those governments and militaries to view more traditional variables such as territory and attrition rates as the indicators to be watched. The territory question may become an especially difficult political variable to deal with in the event of poor future MFC. One could imagine, for example, a 2010 scenario in which Libya attempts to conquer Tunisia with a ground force invasion and NATO intervenes to save Tunisia with a combined U.S.-West European expeditionary force. U.S. commanders (having Army XXI divisions at their disposal) would plan to fight a highly fluid defensive maneuver battle, trading space for time until the moment was ripe for a massive counteroffensive. The West Europeans, on the other hand, having mainly previous-generation heavy divisions, could be much more disposed toward a strategy of territorial defense that emphasized holding as much ground as possible while whittling away the attacker's strength through gradual attrition until he was weakened enough to permit a slow and methodical counteroffensive. This type of divergence between theories of war in the Army XXI era would undoubtedly create serious tensions between U.S. and allied political leaders at the highest levels, especially since time will not be in abundant supply in the kinds of short-warning contingencies we are addressing here.

Fourth, poor MFC could compel the U.S. Army to use Army XXI units as "fire brigades" to backstop weaknesses in allied or partner units that could threaten the integrity of the entire allied or coalition military position in theater. Breaking up Army XXI units and using them in this piecemeal manner would frustrate U.S. commanders, lengthening the course of the campaign and creating more opportunities for the

adversary while at the same time fostering resentment within the American public and Congress.

Finally, there is the issue of the alignment of military and political decision cycles in the Army XXI era. The speed of Army XXI operations may simply outstrip the ability of alliance or coalition political leaders to keep up. The rapid movement of U.S. Army XXI divisions may begin to create new political realities on the ground in and of itself, and this could well create confusion among coalition members who will be forced to respond rapidly to the changing circumstances.



## **Closing Technological Gap with Army XXI May Not Be Top European Priority**

- U.S. continues to outspend Europeans 2:1 in modernization and R&D
- Most continental European nations retain territorial defense model of force structuring
  - UK is an exception; moving toward power-projection posture
- European governments may not emphasize technological parity with Army XXI
  - Other national priorities (e.g., investment in civilian industry) constrain defense budgets
  - Diverging views of threats facing NATO in future
  - Regional as opposed to global focus
- Need a set of policies and procedures to remedy poor MFC in lieu of technological parity

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Today, the United States outspends the West Europeans in the areas of defense modernization and R&D by a ratio of roughly 2:1. We think there are two principal reasons why this ratio will not change drastically during our timeframe of interest. First, most West European militaries still maintain some residual ties to the traditional territorial defense model of force sizing and structuring and thus will continue to have significant O&M (operations and maintenance) funds tied down in supporting large numbers of partially manned reserve divisions that would be of little use to NATO in out-of-area expeditionary operations. The exception to this rule is the United Kingdom, which is making an aggressive attempt to convert its armed forces into a lean and light power-projection oriented military. Second, most continental European governments have other priorities besides the creation of armies that are the technological equal of Army XXI. The 1990s have presented most West European countries with serious challenges in the form of high structural unemployment, declining competitiveness in leading-edge industries, and decisions over the future shape of the European Union. Dealing with problems such as these takes precedence over wide-scale military modernization in the minds of most European elites.

Furthermore, there is a difference in threat perceptions in key out-of-area regions between U.S. and West European national security analysts. This divergence is most evident in the Persian Gulf, where the Europeans (with the exception of the British) do not appear to share

Washington's view of Iran and Iraq as implacable, long-term adversaries of the West. Whereas Washington tends to see the Persian Gulf in stark "black and white" terms, the Europeans are coming to view the region as having several shades of gray. The diplomatic push by France in late 1997 and early 1998 to avert U.S. air strikes against Iraq as well as the recent confirmation of new French investments into Iranian oil and natural gas fields are clear signs of a widening gulf in U.S. and European perceptions of the threat environment in the region. In the minds of many Europeans, the regional threats that the United States government worries about are just not serious enough to warrant the type of expenditures that would be needed to build ground forces equal in sophistication to Army XXI.

The upshot of all this is that, since we cannot count on the West Europeans to solve looming MFC problems through increased investments in technology, we must focus our combined attention in the U.S. defense community upon crafting policies and procedures that could help remedy capability gaps or take advantage of existing diversities between the U.S. and West European militaries. It should be noted here that this prescription can now also be applied to some of our potential military partners in Southeast Asia. The 1997-98 Asian economic crisis forced many of these states (e.g., Thailand, Malaysia, Singapore) to cut back on military procurements. Thus, it is probable that any future MFC problems with our Southeast Asian partners will also have to be handled with policy "workarounds" rather than through technological "fixes."

## Briefing Outline

- Army XXI design
- Assessing US/NATO allies capabilities gap
- • Possible remedies
  - Aligning command structures with scenarios
  - Other policies and procedures
  - Engagement measures

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The final section of the briefing discusses some possible policy remedies for looming MFC problems.

## **We Have Posited Six Command Structure Types**

- 1. Integrated command structure / force separation**
  - 2. Integrated command structure / force integration**
  - 3. Parallel command structure / force separation**
  - 4. Parallel command structure / force integration**
  - 5. Lead nation / force separation**
  - 6. Lead nation / force integration**
- 3 is often the default start point for ad hoc coalitions**
  - 3 often evolves into 5 or 6 as a coalition matures**
  - 2 is exemplified by NATO ARRC force**

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Alignment between command structure type and scope and nature of an operation is one of the key variables that can be used to compare and contrast different multinational operations. Based on our reading of the literature in this area, we believe that there are six major types of multinational command structure:

1. An integrated command structure with separated national forces;
2. An integrated command structure with integrated national forces;
3. A parallel command structure in which different national contingents retain their own unique command structures, with force separation;
4. A parallel command structure with force integration;
5. A lead nation command structure with separated forces;
6. A lead nation command structure with integrated forces.

Historically, structure 3 has often been the starting point for ad hoc coalitions. As time goes on, many ad hoc coalitions have chosen to transition from 3 to one of the lead nation command structures because of the benefit of greater centralization of command. Indeed, this tendency of many command structures to mutate as time passes in longer operations can exist in SSCs as well. In some SSCs, for example, coalition forces might begin with structure 5 and then eventually move

toward structure 2. Well-established alliances have tended to gravitate more toward one of the integrated command structures; for example, NATO's Allied Rapid Reaction Corps (ARRC) uses an integrated command structure with force integration.

### **Key Variables Influence Command Structure Selection for MTWs**

- In area / out of area (Balkans vs. Persian Gulf, Transcaucasus)
- Warning time (short vs. long)
- Duration of combat (short vs. long)
- Type of war (attrition vs. maneuver)
- National force separation (Yes/No)

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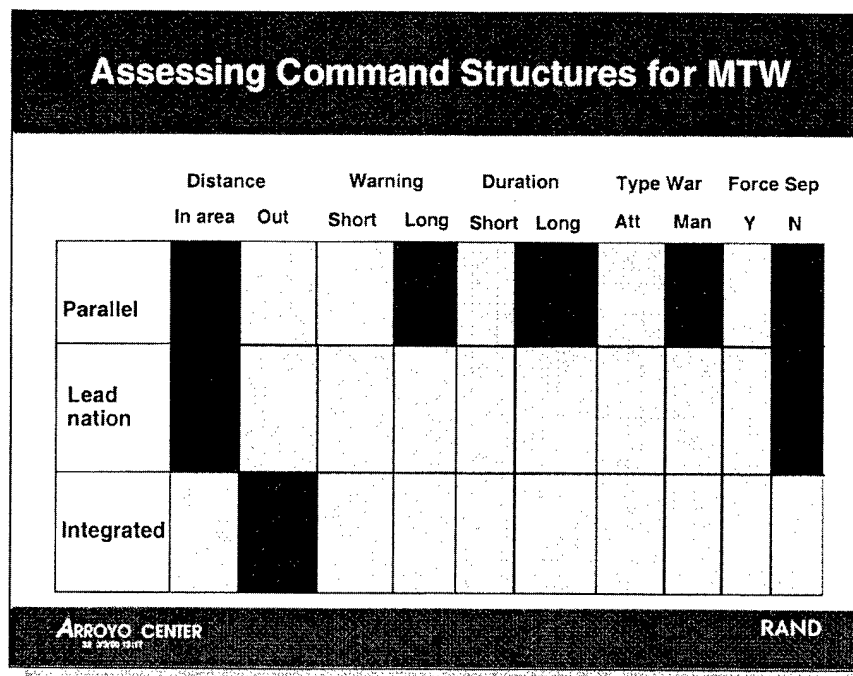
As noted earlier, we think policy workarounds will be easier than technological fixes to implement as a remedy to multinational force incompatibility. Perhaps the most doable workaround proposed here is a simple system for matching multinational command structures with different kinds of contingencies, thus allowing for a smoother transition from peace to war in both coalition and alliance operations.

Creating such a parsimonious system first requires that we determine which variables can best describe the level of suitability of a command structure for a given contingency type. The appropriate variables do vary somewhat with macro contingency type. For MTWs the following five variables were chosen:

1. In-area versus out-of-area contingencies. For NATO, we define operations in the Balkans or Eastern Europe as in area, while operations in North Africa, the Persian Gulf, or the Transcaucasus would be regarded as out of area.
2. Warning time (short versus long).
3. Anticipated duration of combat (short versus long).
4. Type of war (attrition vs. maneuver). U.S. military doctrine in its present state clearly eschews attrition warfare in favor of maneuver. But one cannot eliminate the possibility that some future conflicts could turn into wars of attrition because of circumstances beyond the control of the U.S. Army's operational commanders.

5. Whether or not national forces are to be separated in theater. We define national force separation as the maintenance of distinct national units at the brigade level in an MTW.

For SSCs, the type of war variable is obviously not applicable, since SSCs by definition are not large-scale wars, even though they can include episodes of combat. Thus, for our SSC command structure analysis we substituted nature of local environment and type of mission for the nonapplicable variable from our MTW framework. The SSC framework thus has six variables, one more than the MTW framework.



This stoplight chart shows the regions of MTW applicability and nonapplicability for each of the macro multinational command structure types (parallel, lead nation, and integrated). Here the three major types of command structure are arrayed vertically while the binary outcomes for each of our five critical variables are arrayed horizontally. The darkly shaded squares indicate areas where a given command structure would not be effective, and the lightly shaded squares indicate areas where a given command structure could function.

The coding seen in this chart allows us to describe the strengths and weaknesses of the major command structure types. For MTWs it appears that lead nation command structures can function in almost all out-of-area MTWs. Lead nation structures would be ineffective only in those situations where force separation would not be maintained below the brigade level. In contingencies where the use of nationally mixed brigades was contemplated, lead nation structures would not be a good solution because of the difficulty in commanding and controlling integrated unit and headquarters staffs with a lead nation superstructure. Parallel command structures are useful mainly in the early phases of short-warning out-of-area MTWs that are relatively static in nature: that is, conventional wars of attrition rather than maneuver. Integrated command structures are limited to in-area MTWs (where they usually work well, as in Bosnia), and they are very hard to transport out of area.



## Appropriateness of MTW Command Structures

- Lead nation command structures are the most flexible
  - Can succeed in almost all scenarios
- Parallel command structures useful in early phases of out-of-area MTWs that are relatively static
- Integrated command structures hard to transport out of area

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In assessing the utility of the different command structures for MTWs, one can make several statements. Lead nation command structures seem to be the most flexible of the three. They would prove useful in almost all out-of-area scenarios save those without force separation. Outside of the framework of NATO (for example in East Asia), lead nation structures would even prove useful to the United States for "in-area" operations.

Parallel command structures are more limited. They are unwieldy in wars of maneuver because they are not well suited to the kind of rapid decisionmaking often required in fluid campaigns. Parallel structures are better suited to short-warning rather than long-warning MTWs because long warning times should give the military leaders of a coalition or alliance plenty of time to put a lead nation, or perhaps even an integrated command structure, in place.

Finally, integrated command structures are simply not portable out of area; they are useful only in those theaters proximate to NATO territory. In the near future at least, NATO's out-of-area operations will likely require either lead nation or parallel command structures.

### **Key Variables Influence Command Structure Selection for SSCs**

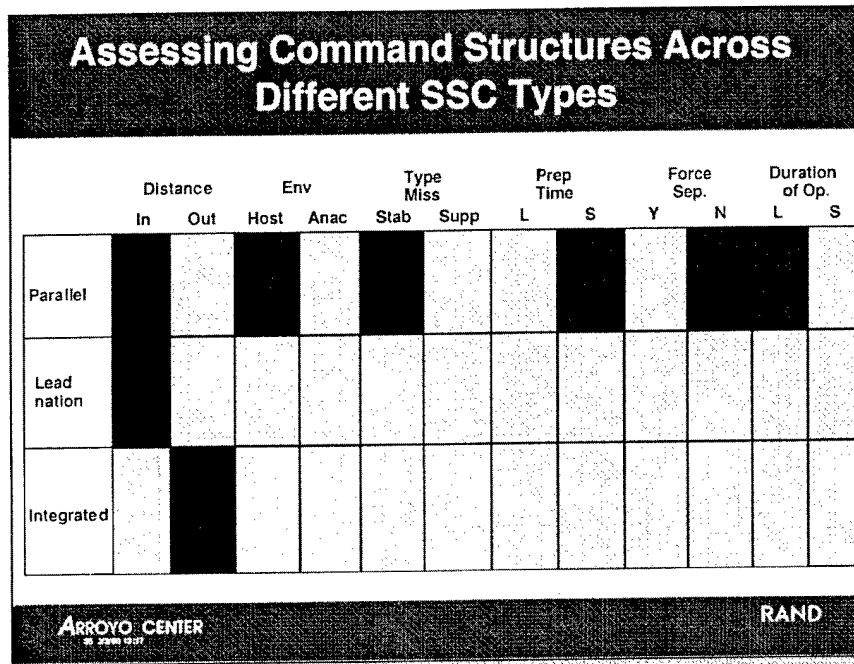
- In area / out of area
- Warning time (short vs. long)
- Nature of local environment (hostile / anarchic)
- Type of mission (stabilization / support)
- National force separation (Yes / No)
- Anticipated duration of operation (short vs. long)

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We now move on to alignments between command structures and contingency types in the realm of SSCs. As was shown earlier, the key variables that help us assess the suitability of different command structures for different kinds of SSCs are not the same as those employed to assess command structure compatibility for different types of MTWs. The six key variables for SSCs are listed below:

1. In area/out of area
2. Warning time (short or long)
3. The nature of the local environment (hostile or anarchic). Anarchic environments are those in which the principal threat to Army forces is lawlessness and criminal activity. Hostile environments are those in which a structured military threat exists.
4. Type of mission (stabilization or support operations).
5. Whether or not national forces are separated (Yes/No). As is the case in the MTW part of this framework, we define force separation to mean the maintenance of distinctly national units at the brigade level.
6. Anticipated duration of operation (short versus long)



Here we see the stoplight chart that was developed to observe regions of applicability and nonapplicability with respect to our three command structure types in SSC contingencies. Once again, darkly shaded squares indicate situations where a given command structure would not be effective, and lightly shaded squares show us areas where a given command structure would function adequately.

As we can see, the only restriction on lead nation structures for the case of SSCs is the truism that they are not going to be effective in in-area contingencies for which NATO has already established integrated command structures. Outside of this limitation they are universally applicable. Parallel command structures are observed to be most useful in less-demanding, shorter-duration support-type operations conducted in anarchic, as opposed to genuinely hostile, environments. Integrated command structures are seen to be a useful tool in all possible in-area SSC contingencies for NATO but have little to no utility in out-of-area SSCs. This is another similarity with the MTW framework.

## **Appropriateness of SSC Command Structures**

- **Once again, lead nation structures are most flexible**
- **Parallel structures most useful in support operations conducted in relatively benign environments**
- **Integrated command structures hard to transport out of area**

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Just as in the case of MTW, our assessment tells us that lead nation structures are the most flexible of the three types in SSCs. This is because parallel command structures tend to feature relatively slow decisionmaking processes that would not be well suited to the dynamic threats multinational forces might face in stability operations and/or a hostile environment. As an example, the anarchic environment that existed in Rwanda and northeastern Zaire in 1994 was conducive to the use of a parallel command structure. In contrast, the potentially hostile environment that awaited American forces and their NATO allies in Bosnia in early 1996 would not have been appropriate for a parallel command structure. Indeed, as the case studies associated with this study have demonstrated, the use of a well-oiled, integrated command structure in Bosnia in 1996 was one of the chief reasons for the success of NATO IFOR on the ground.

Finally, we note that the high levels of organizational cohesion found in experienced integrated NATO command staffs make them the superior alternative in virtually every conceivable in-area scenario. As NATO expands, it will be vitally important to preserve the sharpness of these staffs through frequent and well-planned command post exercises. However, we found that integrated command structures were not very portable, that is, they would not function well in out-of-area contingencies.

## **Force Coordination Initiatives Could Help Ameliorate Difficulties as Well**

- **Better division of labor among West European NATO countries, e.g.**
  - UK (naval power projection, sealift, amphibious forces), Germany (armored/mech divisions, tacair), Holland/Belgium (special forces, intel collection, commercial satcom, log networks)
- **Make development of Force XXI C3I operational architectures more transparent to NATO allies**
- **Set up C3I compatibility maps for each U.S. ally and potential coalition partner**

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In addition to making sure that command structures are properly matched with contingency types in the future, the U.S. Army could also improve MFC with allies and partners by undertaking a variety of policy initiatives in the area of force coordination. Three in particular stand out.

First, over the long term, the United States could try to persuade its West European NATO allies to create a division of labor among themselves in terms of military expeditionary capability. If each West European military adopted a specialty area for its participation in multinational expeditionary operations, then the United States could deal with most MFC issues on a bilateral as opposed to a multilateral basis. This would certainly simplify many trans-Atlantic interoperability issues. For example, one could imagine a future European ARRC in which the British provided blue water naval forces and marines, the Germans provided heavy ground forces and tactical air units, and the Dutch and Belgians contributed special forces and intelligence collection and logistics assets. Needless to say, there would be severe political problems in having this paradigm implemented, as it would herald a true denationalization of defense in Western Europe. It is unlikely that this type of structure could be brought into being in the Army XXI era, but perhaps it could be realized in the Army After Next era.

Second, it would be beneficial for the United States to make some facets of the development of the Force XXI operational architectures more transparent to those NATO allies most likely to participate in power-projection operations with us. There are strong indications that the development of these architectures is today opaque even to the U.S. Navy and Air Force, let alone our key European allies. Injecting some transparency into the development process might well head off some MFC problems at an early phase.

Third, the Army could set up a database of "C4I compatibility maps" that would include profiles of the C4I capability of every major U.S. ally and potential coalition partner. Recent RAND research has begun to broach the possibility that this kind of a database might help us to assess our level of command-and-control compatibility with a host of different foreign militaries. Such a tool could be "pulled off the shelf" at the outset of each multinational operation to ease the always difficult transition to partially integrated C4I networks.

The set of policy workarounds laid out on this chart are of a different nature from the command structure assessment framework we discussed earlier in that they have the potential to become fixes if they are institutionalized by NATO over the long run; indeed, the technological/operational initiatives recommended here are shaping actions that are more proactive than the hedging actions represented by the command structure assessment framework. In this sense they are more robust solutions to low compatibility than the command structure assessment framework.

## **C4I Compatibility Maps Would Be Based on MITRE LISI Model**

### **Levels of Interoperability:**

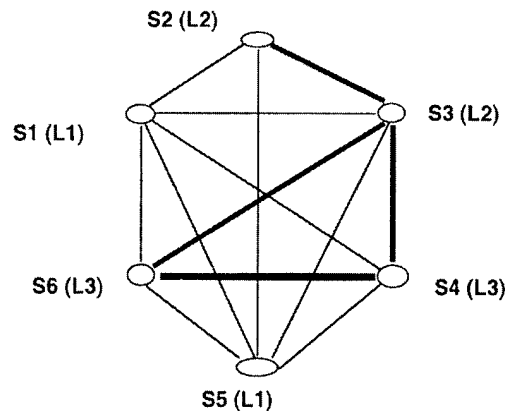
- 0. Isolated (manual)**
- 1. Connected (peer to peer)**
- 2. Functional (distributed)**
- 3. Domain (integrated)**
- 4. Enterprise (universal)**

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The notion of compatibility maps is facilitated by the existence of a new model for assessing C4I compatibility. The model is called LISI and it was created by The MITRE Corporation. LISI provides a new typology of levels of compatibility that is more modern than the one used currently by NATO. The five compatibility levels in LISI are laid out above in increasing order from top to bottom.

### LISI Model Would Allow Army Planners to Identify Weak Points in Potential Multinational Architectures



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Above is a notional portrayal of what a LISI compatibility map might look like for a given U.S. ally or partner. If we assume that nodes S3–S6 are U.S. systems and S1–S2 are the ally's systems, this map portrays the compatibility levels of each system-to-system interaction. The "L numbers" in parentheses denote the compatibility level of each system, and the overall level of compatibility between two systems is the lower of the two numbers. Thus, the level of compatibility between an L1 and an L2 system would be L1. The darker the line on the map above, the higher the level of compatibility.

These compatibility maps could have two policy purposes for the Army. First, each map would show technical shortcomings in interoperability between the United States and a given ally, thus helping C4I planners to think about workarounds that could be used with the particular ally even before a combined operation began. In essence, a compatibility map could give Army communications planners a head start in thinking about ways of overcoming technical difficulties in the field. Second, these maps could be used to develop modest bilateral investment strategies with key allies that might ameliorate some technical problems in peacetime without necessitating major new procurement spending. Small changes in architectures and additions of peripheral equipment could, in some cases, increase communications compatibility between the United States and a given ally or partner.



## **Intensive Engagement Is a Third Approach to Redressing MFC Problems**

- **Use U.S. Army forward presence more as an interoperability wedge**
  - Common sets of prepositioned ammunition and spare parts
  - Forward-deployed liaison teams
- **Identify “anchor coalition partners” around the world**
  - Identify most compatible partners in each region and build “foundation” planning staffs with them for potential local contingencies
- **More closely track military evolution of allies and potential partners**
  - Move beyond focus on weapons acq. and force structure size to training levels, organizational cohesion, doctrinal innovation, etc.

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In addition to matching command structures with contingencies and undertaking greater force coordination, politico-military engagement strategies offer yet a third way of dealing with MFC problems. We have identified three such strategies that seem appealing.

First, the U.S. Army's forward presence postures in critical regions of the world outside Europe could increasingly be employed as an interoperability wedge that would serve as a springboard from which coalition operations could begin. Such a program would include the prepositioning of common stockpiles of ammunition and spare parts and a larger number of forward liaison teams. This interoperability wedge program would almost certainly have to be part of a broader set of engagement initiatives to be conducted with our close allies and friends outside of Europe.

Second, the United States could identify anchor coalition partners in each region outside Europe and build bilateral planning staffs with those anchor partners that would form the basis of any future U.S. Army operation in the region. These bilateral staffs would establish common protocols and standards that could be expanded to other friendly nations in the region in the event of a wide-scale conflict or contingency. For example, in Southeast Asia the Army might choose to identify Singapore as its anchor coalition partner and create a combined U.S.-Singaporean command staff structure. In the event of a scenario such as the collapse of governmental authority in Indonesia, this

command staff could quickly serve as the foundation for a large-scale U.S./ASEAN peacekeeping mission into Indonesia. Similar arrangements could be made in the Persian Gulf, Latin America, and sub-Saharan Africa.

Third, Army intelligence should make a concerted effort to track nonstandard indicators of military capability in regions where we do not have formal alliances. Instead of just focusing on force structure size and major procurement programs, the Army should consider less tangible indicators of military prowess such as number and quality of training exercises, level of cohesion within the officer corps, and the presence or absence of doctrinal innovation. These softer measures of military capability will allow us to better identify those armies with which we can be most compatible.

This sort of new approach to understanding the military capabilities of potential friends could be further helped along by some new initiatives within the Army itself. One possibility could be to create a new center for the study of comparative strategy that would devote itself to monitoring trends in the military doctrine of potential friends and partners outside NATO and reporting to the Army leadership on the likely impact of these trends on compatibility in future operations. Yet another could be a push to make the reserve component the Army's main point of contact with extra-European friends and partners during peacetime. Certain reserve intelligence and civil affairs personnel, for example, could be earmarked for annual mil-mil exchanges with significant regional actors like Malaysia, Singapore, South Africa, Chile, etc. These kinds of programs might allow the Army to use engagement as a more precise instrument for identifying looming MFC problems.

## Summary

- Significant C4I, employment, logistics interoperability problems could arise between Army XXI and allied ground force
  - Greatest stress in short-warning, out-of-area contingencies
- Uncertain European defense investment climate compels policy/procedural remedies (concrete fixes may not occur)
- Can attack emerging problems with three prongs
  - Anticipate appropriate command structures
  - Force coordination and information sharing
  - Employ forward presence and mil-mil contacts as a tool for intensive engagement on interoperability issues and concerns
- No substitute for extensive combined procedural planning for out-of-area scenarios
  - Cannot always count on last-minute technical workarounds and improvisation

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In summary, this briefing has shown that significant compatibility problems could arise between Army XXI and West European NATO allied ground forces in the 2005–2010 time frame in short-warning, out-of-area contingencies. These problems will undoubtedly be most serious in MTWs, or major conventional wars, but they will also appear in smaller-scale contingencies.

Furthermore, we have seen that the current political climate in Western Europe will probably not allow major increases in defense investment spending, which would be necessary if the Europeans were to raise the capability of their ground forces up to U.S. Army XXI levels. As a result, to ameliorate such MFC problems as will arise, the Army will need to rely mainly upon policy and procedural workarounds as opposed to technical fixes.

We are optimistic about the prospects for such policy workarounds and have laid out three broad types for the Army to consider employing: matching command structures with contingency types, increasing force coordination and information sharing with our allies, and initiating new engagement strategies with potential coalition partners outside of Europe. We caution that these procedural and policy remedies must be pursued in peacetime and over the long term if they are to be successful. We simply cannot count on last-minute workarounds at the outset of a major contingency as our principal solution for MFC shortfalls.

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